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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,512	06/26/2000	EVGENY INVIEVICH GIVARGIZOV	GIVAR.001APC	7492

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EXAMINER

CLEVELAND, MICHAEL B

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 06/18/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/530,512

Applicant(s)

GIVARGIZOV ET AL.

Examiner

Michael Cleveland

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 15-29 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II in Paper No. 8 is acknowledged.
2. Claims 1 and 15-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 18-29 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 18-29: There is no disclosure which would enable one of ordinary skill in the art to make the invention which would enable one of ordinary skill in the art to have practiced the invention without undue experimentation. Applicant claims the deposition of an "intermediate substance" other than the luminescent material that "form[s] a liquid phase at the crystallization temperature". However, neither the specification nor the prior art gives any guidance or teaching as to the selection of any such material. Therefore, one of ordinary skill in the art would have to perform undue experimentation in order to such a material and thereby to practice the invention. The problem is compounded because the meaning of "the crystallization temperature" is not clear (See below).

Further, there is no suggestion of how to remove the liquid layer that would enable one of ordinary skill in the art to form a screen "consisting of single-crystalline columns on substrates". (See rejection under 35 USC 112, 2nd paragraph, below.)

Claims 24-26 and 28-29: The term "microrelief of inhomogenities" is not defined by the specification nor the prior art, and it is not clear what the term means. One of ordinary skill in the art would not be able to perform the claims without undue experimentation because it is not

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clear what a “microrelief of inhomogenities” and because neither the specification nor the prior art gives any guidance as to how such a microrelief is created.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 18-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 18-29: The phrase “an intermediate substance forming a liquid phase at the crystallization temperature” is unclear because it is not clear (except in claim 20, which positively recites that “the liquid phase is formed”) whether the substance need merely be capable of forming such a layer or whether the claims actually require the formation of such a liquid phase.

The phrase “luminescent screens consisting of single-crystalline columns on substrates” is unclear because the claims require an intermediate, apparently liquid, layer between the columns and the substrate, and therefore it does not appear that the screens can “consist of” single-crystalline compounds without removing the intermediate layer. However, the specification does not provide any suggestion to remove the intermediate layer, much less teach a method of accomplishing such removal. If no removal is intended, the open transitional language “comprising” may be more appropriate than “consisting of”.

The term “the crystallization temperature” does not have proper antecedent basis. That is, it is unclear what crystallization temperature is being referenced (e.g., the luminescent material, the single-crystalline columns, the substrates?).

Claim 23: Claim 23 specifies that at least one chemical element in the intermediate substance “operate[s] as a luminescent activator or co-activator”. However, these elements are not in the luminescent layer. Is this a statement that the intermediate substance itself is luminescent?

Claims 24-26, 28-29: The claim is unclear because the term "a microrelief or inhomogenities" is not defined in the specification nor the prior art, and therefore it is unclear what the term means.

Claim 25: Further, it is unclear how inhomogeneities can be "regular". The term "regular" appears to be repugnant to the term "inhomogeneities". (Note: The claims actually use the word "inhomogenities". The examiner has assumed that this is a typo for "inhomogeneities". Otherwise, it is another undefined term.)

Claim 27: The term "the activator or co-activator" lacks proper antecedent basis because parent claim 18 does not refer to an activator or co-activator.

Claim Objections

7. Claims 24-26 are objected to because of the following informalities: It appears that "inhomogeneities" is misspelled as "inhomogenities" in claims 24-26 (See above.) Also, "created" is misspelled in claim 24. Appropriate correction is required.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Insofar as the claims are understood, the following art appears to be relevant:

U.S. Patent 4,626,694 to Sano et al. teaches the deposition of phosphor material in columns (Fig. 12) by molecular beam epitaxy (MBE) (col. 5, lines 30-44). MBE inherently produces single-crystalline structures and is a vapor deposition technique. There is an intermediate layer (36) on metal substrate (37) that may be a metal oxide or synthetic resin (col. 5, lines 21-29). However, it is unclear whether these materials form liquids at any relevant crystallization temperatures.

U.S. Patent 4,626,739 to Shmulovich teaches the deposition of phosphor material by the formation of a single-crystalline layer of a phosphor (col. 5, lines 9-14) and then etching to form mesas (i.e., columns) (col. 2, lines 49-55; Example; Fig. 1). It is unclear whether the underlying layers (24) (a binder layer which may be made of Al-Si or Au-Si (col. 3, lines 47-50)) or reflective layer (16) (which may be Al or silica (col. 3, lines 43-47)), which are formed on substrate (22) form liquid phases at any relevant crystallization temperatures.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cleveland whose telephone number is (703) 308-2331. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-3186 for regular communications and (703) 306-3186 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

MBC

MBC

June 12, 2002


MICHAEL BARR
PRIMARY EXAMINER